DOCUMENT RESUME

ED 280 383 HE 020 234

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TITLE An Economically Driven Enrollment Projections Model. AIR 1986 Annual Forum Paper.
PUB DATE Jun 86
NOTE 28p.; Paper presented at the Annual Forum of the Association for Institutional Research (26th, Orlando, FL, June 22-25, 1986).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Budgets; College Admission; *College Students; *Economic Factors; *Enrollment Projections; Full Time Students; Graduate Students; Higher Education; Income; Institutional Research; Longitudinal Studies; *Models; Part Time Students; School Funds; Student Costs; *Tuition; Undergraduate Students
IDENTIFIERS *AIR Forum

ABSTRACT

An admissions/enrollment model was developed using 5 years of data on undergraduate and graduate enrollment, admissions, budget and tuition revenues, and anticipated tuition costs. The model produced estimates of admissions and enrollment numbers required to meet projected increases in the institutional budget. Using a variation of the Markov Model, the model was developed with Lotus Symphony. A menu-driven spreadsheet program was used to develop transitional probabilities. After calculating the projected graduate/undergraduate tuition revenues required in each semester to meet the projected education and general budget and tuition revenue increases, the headcount and full-time equivalent undergraduate and graduate enrollments required to meet these revenue requirements were calculated. The enrollment projections were obtained using full-time and part-time enrollment ratios, projected tuition costs, and the average number of credit hours taken by part-time students. The accuracy of predicting the overall graduate/undergraduate enrollment was within 2%; the enrollment by year in school averaged 4% and was not larger than 10%; and the number of admissions applications, acceptances, and deposits averaged 5%. (SW)

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An Economically Driven Enrollment Projections Model

by

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This paper was presented at the Twenty-Sixth Annual Forum of the Association for Institutional Research held at the Marriott Orlando World Center, Orlando, Florida, June 22-25, 1986. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Ann K. Dickey, Chair
Forum Publications Editorial
Advisory Committee

An Economically Driven Enrollment Projections Model

Abstract

This research used five years of data on undergraduate and graduate enrollment, admissions, budget and tuition revenues, and anticipated tuition costs to develop an admissions/enrollment model. The model produced estimates of admissions and enrollment numbers required to meet projected increases in the institutional budget. The accuracy of the first of five years of admissions and enrollment projections was evaluated. The accuracy of predicting: the overall graduate and undergraduate enrollment was within 2%, the enrollment by year in school averaged 4% and was not larger than 10%, the number of admissions applications, acceptances, and deposits averaged 5%.

An Economically Driven Enrollment Projections Model

Introduction

In an era of constrained financial resources, the maintenance of enrollment in colleges and universities has become increasingly important. For public institutions whose funding is based on enrollment, knowledge and control of enrollment is critical. In private institutions, where tuition revenues are a major portion of the annual budget, enrollment maintenance is a matter of life or death.

Reflecting their concern for enrollment, college and university administrators are making increased use of the term "enrollment management" (Kreuter and Godfrey, 1981; Kremer, Baldridge and Green,1982; Hossler, 1984). Along with developing programs designed to attract and retain students, many college and university administrators are developing research programs which will support their enrollment management programs.

This research is centered around the development of longitudinal flow models which assume that enrollment is a continuous process of linked events and decisions beginning when a student applies for admission and ending when he/she completes an academic program (Ewell, 1984). Over the years, a number of different approaches have been used for estimating the flow of students through an institution (Wing, 1974; Rumpf, 1978; Kraetsh, 1980; Yost and Wood, 1985). These models are for enrollment projection and enable administrators to estimate future enrollment in order to be able to aid in budget decision making. These models have their roots in "Markov" or "Cohort Survival" model statistics. These models develop a set of transition probabilities which

determine the distribution of a particular population among various defined states (i.e., enrolled, dropped out, etc.) over discrete time periods (i.e., semesters, years, etc.) (Stokey and Zeckhauser, 1978). The transitional probabilities are developed from historical admissions, enrollment and financial data and are used to develop projections of future admissions, enrollment, and budgets.

* *

Insert Figure 1 about here.

* *

The research in this paper is based on a variation of the Markov Model and makes use of transitional probabilities derived from historical recruiting and enrollment data. The principal question asked in this research was: "What enrollment, admission, and retention rates must be maintained over a five-year period to permit the annual budget to increase at a rate of 7% per year?" It is based on the four constraints and assumptions outlined in Figure 1. The first deals with the fact that for an institution to progress and grow its budget must continue to increase at a predictable rate. The second constraint or assumption deals with the degree to which an institution is dependent upon tuition revenues to fund the Education and General Budget (E&G). At our institution, tuition revenues constituted only 45% of the E&G Budget in the year that this research was begun. As a part of the institutional long range plan, it was decided that actions should be taken to increase this proportion by approximately 1 % in each of the next five years. The third constraint or assumption deals with the maintenance of the endowment. Although the

current endowment at our institution is relatively large for an institution of its size, we are taking steps to insure that the buying power is maintained in future years. To do this, the Board of Trustees has decided to limit the expenditures from the endowment and to invest the earnings that are not spent. The final assumption is a very basic one and the one on which the preceding three are dependent. If there are significant changes in the annual rate of inflation in the five years, then it will be necessary for us to make changes in the other constraints and assumptions that we have made in the development of our model.

Building the Model

The model was developed using Lotus Symphony (1985) and is based on five years of data. A list of the data elements on which the model was built is contained in Figure 2. These data elements are the admissions, enrollment, and economic statistics kept by almost all institutions.

* *

Insert Figure 2 about here.

* *

As the five years of historic data were entered into the spreadsheet, the transitional probabilities were automatically developed by equations built into the background of the spreadsheet program. A list of the transitional probabilities and the other values calculated within the model are contained in Figure 3. The transitional probabilities and the other values which are automatically calculated within the model for the historic data serve as the basis for the selection and development of the transitional probabilities for the five-year data projections. For

example, if the historic data indicate that 32% (plus or minus 1%) of the persons who made application for admission as freshmen have enrolled in each of the last five years, then this information would assist in the selection of parameters for future years. Following this general approach, the input parameters for developing the five year projections can be selected and the model can be used.

* *

Insert Figures 3 and 4 about here.

* *

The Operation of the Model

The model begins its projections by using the last year of the historic data and the input parameters to calculate the projected graduate and undergraduate tuition revenues required in each semester to meet the projected E&G budget and tuition revenue increases. The head count and FTE undergraduate and graduate enrollment required to meet these revenue requirements are then calculated. The overall enrollment projections are obtained using full and part-time enrollment ratios, projected tuition costs, and the average number of credit hours taken by part-time students. The equation for the development of the overall enrollment projections is contained in Figure 5. All of the values in this equation are known (including the tuition revenue) and the equation is solved for the head count (HC).

* *

Insert Figure 5 about here.

* *

An outline of the operation of the model is contained in

Figure 6. In this figure, the term "Use" denotes the information used in the equations to generate ("GEN") the enrollment or other projections. The model operates in a prescribed sequence. The operational sequence is indicated in the columns and rows of the figure. The model begins by completing the calculations indicated in the top left block in the figure. The model continues by next completing the calculations in the block to the immediate right and then by completing the calculations in the block which is immediately below the starting block. This operational sequence continues until all of the calculations are complete.

* *

Insert Figure 6 about here.

* *

In the fourth block from the top of the left column of Figure 6 the term "Fall-to-Fall pass through ratios" is used. This concept is shown in detail in Figure 7. This concept is based on the assumption that a relatively consistent proportion of the students enrolled as freshmen in one year become sophomores in the next year, that a relatively consistent proportion of the sophomores in one year become juniors in the next year, etc. The numbers in the lower half of Figure 7 are the proportions of the students who passed from one student class to another between years. These proportions are relatively stable, and we therefore believe that our original assumption with regard to using these proportions as the basis for developing transitional probabilities in the model is justified.

* *

Insert Figure 7 about here.

* *

The transitional probabilities (or pass-through ratios) for the fall and spring enrollment of freshmen, sophomores, juniors, seniors, and graduate students are applied to the overall enrollment projections (HC). A set of enrollment projections by year in school for each semester is then obtained. The fall semester freshman enrollment projections are then submitted to the transition probabilities for admissions and a set of application, acceptance, and deposit projections are obtained.

Using the Model

The model is menu driven from within the spreadsheet. That is, there are logically placed and labeled blanks within the spreadsheet where the user can enter estimates of the transitional probabilities and economic variables. Once entered, the new projections for a five-year period are automatically calculated and displayed. Printed copy of the projections, transitional probabilities, economic variables, and historic data can all be obtained through a series of three key strokes. Enrollment and admissions projections can be modeled by adjusting tuition rates, tuition revenues, budget increases, and transition probabilities. The model is flexible and responsive enough to permit the user to determine the effect of many different combinations of variables on the enrollment and admissions trends at an institution in a very short period of time. The model permits the user to develop sets of "Best", "Worse", and "Optimal" scenarios for an institution which are very useful in the process of

developing both short and long range plans.

The model was first tried by retrospectively projecting the data for the current year at our institution. Our institution is a small, predominantly undergraduate institution that concentrates most of its curriculum efforts in the areas of the liberal arts and sciences and has a total enrollment of approximately 2850 (HC) students. Approximately 14% of the students are enrolled in graduate programs. The overall full and part-time graduate and undergraduate enrollment projections were accurate to within 2%. The maximum error of prediction of enrollment of a class within a semester and of an admission category was 8%, and the mean error of prediction was 3.5%.

The model was next used to develop five-year projections which could serve as a set of institutional goals. At the end of the first of the five years, the overall enrollment was within 3% of the projections, the largest error of prediction of a class enrollment was 10%, the mean error of prediction of class enrollment was 4%, and the tuition revenues and budget revenues were within 2% of the projections.

The model has been in use for one year and we believe that it has been useful as a tool in developing institutional goals. The model has been reevaluated, adjustments have been made in the transitional probabilities and the revenue requirements, another year of historical data has been added, an additional year of projection has been completed and the model is being used to develop goals for next year. We look forward to being able to continue to add one year of historical data to the model each year and to being able to continually update our five-year pro-

jections.

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Figure 1

CONSTRAINTS/ASSUMPTIONS:

1. That the E&G expenditures will increase by approximately 7% per year in each of the next five years.
2. That the proportion of the E&G budget which is made up of tuition revenues will increase by approximately 1% in each of the next five years.
3. That the income from the endowment will remain relatively "flat" over the next five years.
4. That there will be no significant changes in the national inflation rate in the next five years.

Figure 2

BASIC DATA INPUT

(five years)

- Education and General Expenditures
- Tuition Revenues – Fall and Spring
  - Graduate Revenues
  - Undergraduate Revenues
- Tuition
  - Cost per credit hour
  - Cost per year
- Enrollment
  - Graduate
    - Fall – Spring
    - Part/Full Time
    - Full Time Equivalent
  - Undergraduate
    - Fall – Spring
    - Part/Full Time
    - Full Time Equivalent
    - Class (New Fr., Fr., So., Jr., Sr., Un.)
- Admissions
  - Applications
  - Acceptances
  - Enrollment

Figure 3

VALUES CALCULATED BY THE MODEL

(five years)

Economic

- Percent increase in Tuition costs (to students)
- Percent increase in Tuition revenues
- Percent increase in E&G expenditures
- Ratio of Tuition revenues to E&G expenditures
- Total E&G expenditures per semester
- Total E&G expenditures per year
- Total Tuition revenues per semester
- Total Tuition revenues per year

Enrollment

(for Fall and Spring semesters)

- Percent new Freshmen in Freshman class
- Percent Freshmen who become Sophomores
- Percent Sophomores who become Juniors
- Percent Juniors who become Seniors
- Percent full/part time undergraduate enrollment
- Percent full/part time graduate enrollment

Admissions

- Percent of applicants accepted
- Percent of accepteds enrolled
- Percent of applicants enrolled

Figure 4

INPUT PARAMETERS

(five years)

Economic

- E&G Expenditures (rate of increase)
- Tuition revenue requirements
- Tuition costs (to students)

Enrollment

- Percent students enrolled full time
- Percent new Freshmen in Freshman class
- Percent Freshmen who become Sophomores
- Percent Sophomores who become Juniors
- Percent Juniors who become Seniors
- Number of unclassified students
- Fall to Spring enrollment ratios

Admissions

- Percent of applicants who enroll

Figure 5

STUDENT HEAD COUNT EQUATIONS

Tuition Revenue = Rev. from full tm. students +
Rev. from part time students
= (# fl. tm. students x Yearly cost / 2) +
(# pt. tm. students x Avg. # Cr. Hr. x Cost per Cr. Hr.)
= ((HC x % fl. tm.) x Yearly Cost / 2) +
((HC (1 – % fl. tm.)) x Avg # Cr. Hrs. x Cost per Cr. Hr.)

Figure 6

OPERATIONAL SEQUENCE OF THE MODEL
(for each year)

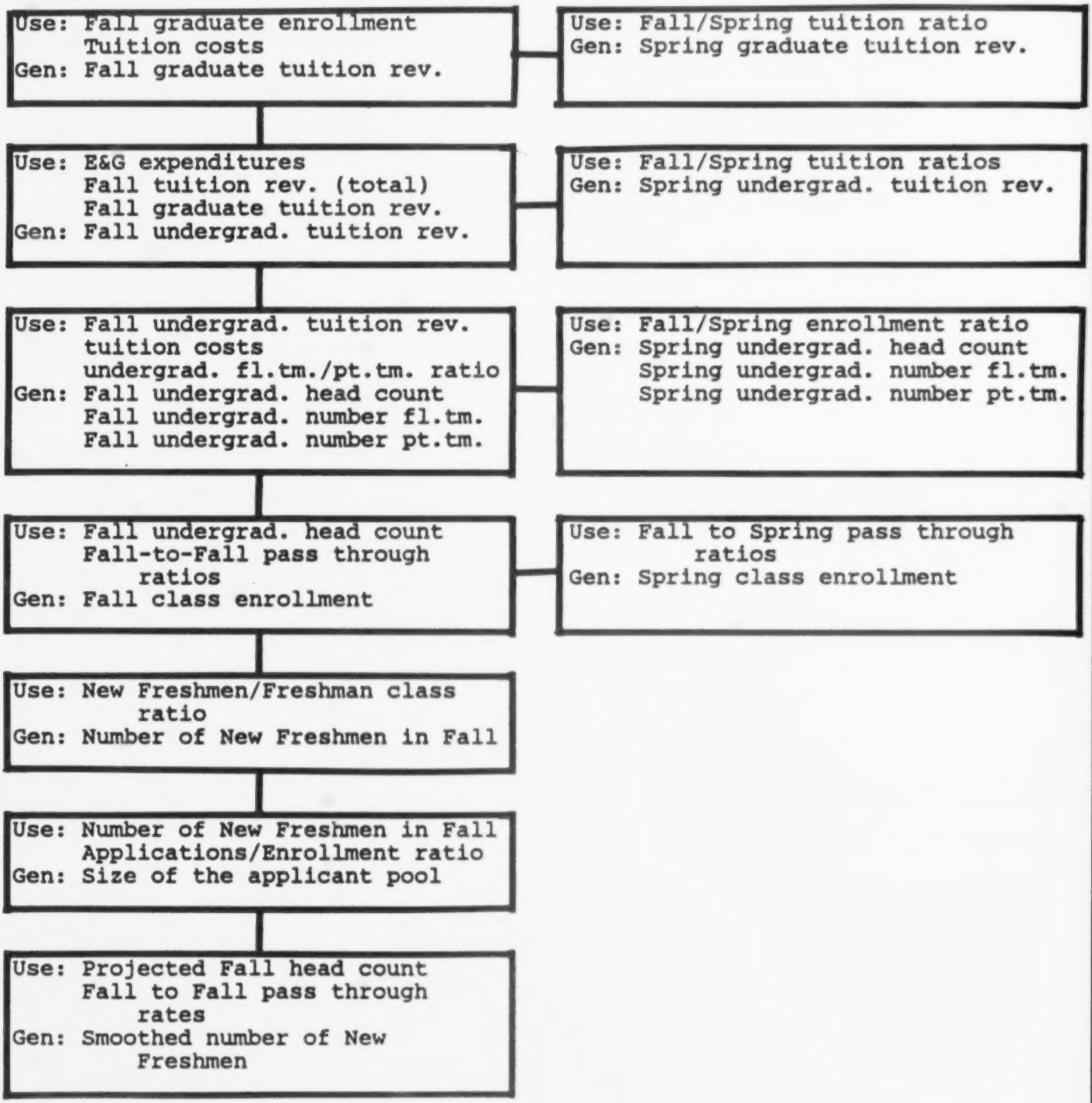
Use: Fall graduate enrollment
Tuition costs
Gen: Fall graduate tuition rev.
Use: Fall/Spring tuition ratio
Gen: Spring graduate tuition rev.
Use: E&G expenditures
Fall tuition rev. (total)
Fall graduate tuition rev.
Gen: Fall undergrad. tuition rev.
Use: Fall/Spring tuition ratios
Gen: Spring undergrad. tuition rev.
Use: Fall undergrad. tuition rev.
tuition costs
undergrad. fl.tm./pt.tm. ratio
Gen: Fall undergrad. head count
Fall undergrad. number fl.tm.
Fall undergrad. number pt.tm.
Use: Fall/Spring enrollment ratio
Gen: Spring undergrad. head count
Spring undergrad. number fl.tm.
Spring undergrad. number pt.tm.
Use: Fall undergrad. head count
Fall-to-Fall pass through ratios
Gen: Fall class enrollment
Use: Fall to Spring pass through ratios
Gen: Spring class enrollment
Use: New Freshmen/Freshman class ratio
Gen: Number of New Freshmen in Fall
Use: Number of New Freshmen in Fall
Applications/Enrollment ratio
Gen: Size of the applicant pool
Use: Projected Fall head count
Fall to Fall pass through rates
Gen: Smoothed number of New Freshmen

Figure 7

ENROLLMENT PASS THROUGH

Numbers

		New Fresh.	Freshmen	Sophomores	Juniors	Seniors
Base	83/84	575	632	550	525	540
Enrl.	84/85	600	660	569	522	514
	85/86	625	687	607	546	512
Proj.	86/87			625	583	535
Enrl.	87/88				606	577

Percents

Base	83/84	---	---	---	---	---
Percent	84/85			90%	95%	98%
	85/86			92%	96%	98%
Proj.	86/87			91%	96%	98%
Percent	87/88			92%	97%	99%

APPENDIX

ENROLLMENT PROJECTIONS MODEL

REVENUES

YEAR	TUITION PER HR	TUITION PER YR	PCT INC	TUITION REVENUE FALL	TUITION REVENUE SPRING	TUITION REVENUE TOTAL
1981-82	$145	$3,480		$4,671,000	$4,298,000	$8,969,000
1982-83	$164	$3,936	13.10%	$5,125,000	$4,751,000	$9,876,000
1983-84	$192	$4,608	17.07%	$5,942,000	$5,489,000	$11,431,000
1984-85	$225	$5,400	17.19%	$6,716,000	$6,144,000	$12,860,000
1985-86	$260	$6,240	15.56%	$7,483,000	$7,022,000	$14,505,000
1986-87	$290	$6,960	11.54%	$8,196,000	$7,565,000	$15,761,000
1987-88	$315	$7,560	8.62%	$9,261,480	$8,613,176	$17,874,656
1988-89	$340	$8,160	7.94%	$10,465,472	$9,732,889	$20,198,362
1989-90	$365	$8,760	7.35%	$11,721,329	$10,900,836	$22,622,165
1990-91	$390	$9,360	6.85%	$13,127,889	$12,208,936	$25,336,825
	*****				(93% DIFF)	

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COLUMNS WITH ********* UNDER THEM MAY BE MANIPULATED

REVENUES - CONTINUED

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YEAR	UNDERGRADUATE TUITION REVENUE FALL	UNDERGRADUATE TUITION REVENUE SPRING	UNDERGRADUATE TUITION REVENUE TOTAL	GRADUATE TUITION REVENUE FALL	GRADUATE TUITION REVENUE SPRING	GRADUATE TUITION REVENUE TOTAL
1981-82	$4,141,000	$3,872,000	$8,013,000	$530,000	$426,000	$956,000
1982-83	$4,551,000	$4,280,000	$8,831,000	$574,000	$471,000	$1,045,000
1983-84	$5,274,000	$4,888,000	$10,162,000	$668,000	$601,000	$1,269,000
1984-85	$6,038,000	$5,602,000	$11,640,000	$678,000	$542,000	$1,220,000
1985-86	$6,834,000	$6,486,000	$13,320,000	$649,000	$536,000	$1,185,000
1986-87	$7,693,750	$7,182,200	$14,877,950	$500,250	$382,800	$883,050
1987-88	$8,869,305	$8,334,401	$17,203,706	$392,175	$278,775	$670,950
1988-89	$10,182,422	$9,572,239	$19,754,662	$283,050	$160,650	$443,700
1989-90	$11,474,954	$10,766,699	$22,241,653	$246,375	$134,138	$380,513
1990-91	$12,905,589	$12,091,936	$24,997,525	$222,300	$117,000	$339,300

FALL GRADUATE ENROLLMENT

YEAR	FALL HD CNT	FALL FULL TM	FALL PT TM	FALL FL TM EQ
1981-82	686	271	415	430
1982-83	643	236	407	397
1983-84	586	214	372	361
1984-85	537	164	373	296
1985-86	425	132	293	241
1986-87	325	100	225	164
1987-88	215	80	135	119
1988-89	115	65	50	79
1989-90	100	50	50	64
1990-91	90	40	50	54
	*****	*****		

SPRING GRADUATE ENROLLMENT

YEAR	SPRING HD CNT	SPRING FULL TM	SPRING PT TM	SPRING FL TM EQ
1981-82	533	211	322	332
1982-83	594	188	406	334
1983-84	545	181	364	308
1984-85	471	122	349	223
1985-86	376	96	280	198
1986-87	265	70	195	126
1987-88	170	50	120	84
1988-89	70	35	35	45
1989-90	60	25	35	35
1990-91	50	20	30	29
	*****	*****		

FALL UNDERGRADUATE ENROLLMENT — ** DO NOT CHANGE NUMBERS ON THIS SCREEN **

YEAR	NEW FR	TOT FR	SOPHS	JUNIORS	SENIORS	OTHERS
1981-82	537	656	737	390	542	58
1982-83	546	714	691	573	412	61
1983-84	520	614	621	506	577	123
1984-85	630	700	556	480	549	103
1985-86	572	636	640	486	505	67
1986-87	625	687	582	560	510	65
1987-88	582	643	630	511	508	63
1988-89	765	841	591	555	536	62
1989-90	703	768	776	522	582	61
1990-91	775	842	710	686	548	59

FALL UNDERGRADUATE ENROLLMENT SUMMARY — ** DO NOT CHANGE NUMBERS ON THIS SCREEN **

YEAR	HD CNT	FULL TM	PT TM	FL TM EQ
1981-82	2583	2317	266	2471
1982-83	2451	2216	235	2363
1983-84	2441	2220	221	2371
1984-85	2388	2179	209	2318
1985-86	2334	2204	130	2290
1986-87	2404	2272	132	2305
1987-88	2435	2307	128	2338
1988-89	2585	2456	129	2488
1989-90	2709	2580	129	2612
1990-91	2846	2718	128	2750

UNDERGRADUATE PERCENTAGE FLOW

FALL TO FALL

YEAR	FR/NEW FR	FR to SO	SO to JR	JR to SR	PCT FL TM
1981-82	81.86%				89.70%
1982-83	76.47%	105.34%	77.75%	69.83%	90.41%
1983-84	84.69%	86.97%	73.23%	100.70%	90.95%
1984-85	90.00%	90.55%	77.29%	108.50%	91.25%
1985-86	89.94%	91.43%	87.41%	105.21%	94.43%
	(--------- VALUES BELOW THIS LINE MAY BE CHANGED ---------)				
1986-87	90.00%	91.50%	87.50%	105.00%	94.50%
1987-88	90.50%	91.75%	87.75%	105.00%	94.75%
1988-89	91.00%	92.00%	88.00%	105.00%	95.00%
1989-90	91.50%	92.25%	88.25%	105.00%	95.25%
1990-91	92.00%	92.50%	88.50%	105.00%	95.50%

FALL TO SPRING

YEAR	FRESH	SOPH	JUNIOR	SENIOR	PCT FL TM
1981-82	87.65%	82.09%	100.85%	104.80%	89.72%
1982-83	83.05%	75.54%	96.51%	132.52%	90.03%
1983-84	84.53%	82.13%	97.43%	114.21%	89.83%
1984-85	77.86%	95.68%	101.25%	102.19%	91.21%
1985-86	83.02%	87.50%	102.67%	114.65%	94.40%
	(--------- VALUES BELOW THIS LINE MAY BE CHANGED ---------)				
1986-87	83.00%	87.00%	102.00%	110.00%	94.50%
1987-88	83.00%	87.00%	102.00%	110.00%	94.50%
1988-89	83.00%	87.00%	102.00%	110.00%	94.50%
1989-90	83.00%	87.00%	102.00%	110.00%	94.50%
1990-91	83.00%	87.00%	102.00%	110.00%	94.50%

SPRING UNDERGRADUATE ENROLLMENT

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SPRING UNDERGRADUATE ENROLLMENT SUMMARY

	SPRING						SPRING			
YEAR	NEW FR	TOT FR	SOPHS	JUNIORS	SENIORS	OTHERS	YEAR	HD CNT	FULL TM	PT TM	FL TM EQ
1981-82		575	605	595	568	40	1981-82	2383	2138	245	2280
1982-83		593	522	553	546	104	1982-83	2318	2087	231	2228
1983-84		519	510	493	659	120	1983-84	2301	2067	234	2224
1984-85		545	532	486	561	83	1984-85	2207	2013	194	2147
1985-86		528	560	499	579	47	1985-86	2213	2089	124	2167
1986-87		570	506	571	561	45	1986-87	2254	2130	124	2161
1987-88		534	548	521	647	45	1987-88	2295	2168	126	2200
1988-89		698	515	566	590	45	1988-89	2413	2280	133	2313
1989-90		637	675	532	641	45	1989-90	2530	2391	139	2425
1990-91		699	618	700	603	45	1990-91	2665	2519	147	2555

ADMISSIONS

YEAR	MIN APPS	ACCEPTS	NEW FR	NEW FR/APP
1981-82	1413	1121	537	38.00%
1982-83	1674	1010	546	32.62%
1983-84	1568	1110	520	33.16%
1984-85	1950	1383	630	32.31%
1985-86	2100	1572	572	27.24%
	<----- DO NOT CHANGE ----->			<-OK TO CH->*
1986-87	2119		625	29.50%
1987-88	2357		660	28.00%
1988-89	2464		690	28.00%
1989-90	2571		720	28.00%
1990-91	2679		750	28.00%
				********

FALL UNDERGRADUATE ENROLLMENT SMOOTHING FUNCTION

YEAR	NEW FR	TOT FR	SOPHS	JUNIORS	SENIORS	OTHERS
	FALL					
1981-82	537	656	737	590	542	58
1982-83	546	714	691	573	412	61
1983-84	520	614	621	506	577	123
1984-85	630	700	536	480	549	103
1985-86	572	636	640	486	505	67
1986-87	625	688	582	560	510	65
1987-88	660	723	631	511	588	63
1988-89	690	752	665	535	536	62
1989-90	720	781	694	587	583	61
1990-91	750	810	723	614	616	59
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FALL UNDERGRADUATE SMOOTHING - CONTINUED

YEAR	HD CNT	FULL TM	PT TM	FL TM EQ	TARGET HD CNT	TOT HD CNT (GR + UN GR)
	FALL					
1981-82	2583	2317	266	2471	2583	3269
1982-83	2451	2216	235	2363	2451	3094
1983-84	2441	2220	221	2371	2441	3027
1984-85	2308	2179	209	2318	2388	2925
1985-86	2334	2204	130	2290	2334	2759
1986-87	2405	2272	132	2305	2404	2730
1987-88	2515	2383	132	2416	2435	2730
1988-89	2570	2442	129	2473	2585	2685
1989-90	2706	2577	129	2609	2709	2806
1990-91	2822	2695	127	2726	2846	2912

E & G BUDGET AND TUITION REVENUE ESTIMATES

YEAR	% INCR IN TUIT	% INCR TUIT REV	TUIT/E&G	% E&G INC	E&G BUD	TUIT REV
1981-82			42.64%		$21,033,000	$8,969,000
1982-83	13.10%	9.72%	39.13%	19.99%	$25,238,000	$9,876,000
1983-84	17.07%	15.94%	42.41%	6.81%	$26,956,000	$11,431,000
1984-85	17.19%	13.03%	43.98%	8.47%	$29,239,000	$12,860,000
1985-86	15.56%	11.42%	46.79%	6.02%	$31,000,000	$14,505,000
1986-87	11.54%	9.53%	47.37%	7.34%	$33,275,000	$15,761,000
1987-88	8.62%	13.00%	50.20%	7.00%	$35,604,250	$17,874,656
1988-89	7.94%	13.00%	53.02%	7.00%	$38,096,548	$20,198,362
1989-90	7.35%	12.00%	55.50%	7.00%	$40,763,306	$22,622,165
1990-91	6.85%	12.00%	58.09%	7.00%	$43,616,737	$25,336,825